

# **APPENDIX # 4**

CALIFORNIA STRUCTURAL PEST CONTROL  
INDUSTRY STANDARD\*  
TARPAULIN REMOVAL AERATION PLAN

by

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Worker Health and Safety Branch  
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\*Developed in cooperation with the Pest Control Operators of California (PCOC), Sub-Committee on Fumigation, and the Worker Health and Safety Branch of the California Department of Pesticide Regulation (DPR). Copies are available from the PCOC, 3031 Beacon Boulevard, West Sacramento, CA 95691, (916) 372-4363, or the Worker Health and Safety Branch, Room 200, DPR, ~~1020 N~~ 830 K Street, Sacramento, CA 95814-~~3510~~, (916) 445-4222, (Ask for HS-1574).

# CALIFORNIA STRUCTURAL PEST CONTROL

## INDUSTRY STANDARD\*

### TARPAULIN REMOVAL AERATION PLAN

#### Scope

This plan can be used as a general guideline to minimize worker exposure during the clearing operations following fumigation of a typical single family residential structure. It was developed during limited testing of single family residences not over two stories in height. For other types of structures, the basic principle of exhausting the air space between the structure and the tarpaulin utilized in this plan may be applicable. This plan is in addition and designed to complement existing fumigant label requirements and provide additional safety during clearing operations of structural fumigation by establishing an industry standard method of performing this activity. This plan is applicable to structural pest control fumigations using methyl bromide or sulfuryl fluoride.

#### Purpose

The purpose of this procedure is to reduce the fumigant concentration between the tarpaulin covering and the structure (site) and thereby minimize exposure to the clearing crew and should allow tarpaulin removal without exceeding the 5 ppm label exposure value limit for either fumigant. Additionally, the interior concentration of fumigant within the structure is also reduced simultaneously.

#### Equipment Necessary

- A. Electricity - generator, or alternate power to operate aeration fan(s).
- B. Extension cord(s).
- C. Aeration fan(s) capable of moving 3,000 to 5,000 cfm (3 to 5 amp). **Note: for methyl bromide fumigation only, to comply with regulations issued by DPR in early 2000, use exhaust fans with minimum of 5000 cfm capacity. See Title 3, Section 6454 for specific requirements.**

- D. Convection tubing or ducting to fit over fan housing to direct exhausting fumigant away from work area, sensitive plantings or neighboring property.

## Procedure

### Initial Steps

- D. Prior to commencing fumigation, establish power cords and source of electricity to operate exhaust fan(s). Windows shall be closed, or opened to a maximum of six inches (approximate) so the fumigant from the interior of the site does not influence the innerspace between the tarpaulin and the structure.
- E. The exhaust fan location(s) should be selected carefully and engineered in a fashion to protect workers, property and neighboring structures. The fans may also be installed during the tarping period. If fan(s) are installed just prior to aeration, respiratory protection (SCBA) must be worn.
- F. Fan(s) shall be installed at the seams with tarpaulin wrapped or clamped around the fan housing.

### Start of Clearing

- G. Utilize convection tubing or ducting to divert fan exhaust away from the workspace and other sensitive items such as plants and neighboring property. This allows for freedom of movement by employees in this area. Selection of fan site(s) to exhaust fumigant is critical to avoid exhausting fumigant into sensitive areas. Extend tubing from fan up the side of the structure to approximately 10 feet or to the first story roof line. **Note: for methyl bromide fumigation only, to comply with regulations issued by DPR in early 2000, extend tubing from exhaust fan to a point at least 6 feet above the highest point on the roof. See Title 3, Section 6454 for specific requirements.**
- H. Start the fan to draw the tarpaulin down and around the site and exhaust fumigant from the innerspace between the tarpaulin and the structure.
- I. As the tarpaulin contracts, open a seam opposite the fan location to facilitate the draw of the fumigant. Open this seam a few feet.

### Bottom Seal Removal

- J. As the tarpaulin contracts, sandbag or sand snake removal may take place. Workers should be aware of the position of the exhaust tubing and the exhausting fumigant. When possible, work in both directions away from the location of the exhaust fan and tubing when removing bottom seal.

### Clamp Removal

- K. During this phase of the procedure, it is important to remove clamps and leave the tarpaulin in place as much as possible. Open seams farthest from a designated "safe area" and work your way back to this area. Typically, the fumigation truck will be positioned in the "safe area." Remember that "enclosed areas" between site and walls, fencing, or other nearby structures may trap fumigant after clamp removal and removal of the tarpaulin. Avoid these areas as much as possible. Lower clamps should be removed before roof clamps so that tarpaulins do not drop unexpectedly.

### Tarpaulin Removal

- L. When commencing tarpaulin removal, the exhaust fan system may be turned off. When removing the tarpaulins, the roof area creates little hazard (providing worker's breathing zone is not violated). It is safer to pull up tarpaulins and "peel" tarpaulins than to drop them with ground crew below. Peeling the tarpaulins is a procedure whereby the tarpaulin is removed by pulling it off the structure inside out. While working around shrubs, ground crew may lift tarpaulins over shrubs below the waist level (approximate). When encountering shrubs above waist level, the rooftop crew can pull tarpaulins up and over the shrub. It is important that the ground crew are not immediately adjacent to the tarpaulin during this activity. When "peeling back" tarpaulins, the tarpaulin shall be a barrier between the ground crew and the innerspace. The breathing zone of the ground crew is critical in this phase of the procedure to avoid excessive exposure. Caution should be exercised when encountering roof valleys, covered patios, or other areas (dead air spaces) where fumigant may be confined and aeration hindered.

### Tarpaulin Folding

- M. After the tarpaulins are removed, do not walk into areas where fumigant may be trapped unless wearing respiratory protection. Test for airborne fumigant levels

above 5 ppm. Wait for fumigant to dissipate to the acceptable level. If entry is necessary, wear SCBA whenever fumigant concentration exceeds 5 ppm or is unknown. These areas may include patios, atriums, breezeways, etc. Allow time for these areas to fully ventilate. Fold tarpaulins away from the site as far as possible.

## Conclusion

This plan has been tested to enhance worker safety. However, each single family structure may present unique aeration problems that can only be assessed at the site. Common sense and good practice dictate that when atypical sites are aerated, personnel must rely on additional monitoring and respiratory protection to ensure exposure remains below 5 ppm to either methyl bromide or sulfuryl fluoride.

## Footnotes

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Procedure based on employee exposure reduction data contained in reports HS-1352 and HS-1538, available from the WH&S Branch of DPR.

This plan has been accepted by the California Department of Pesticide Regulation as provided for in Title 3, California Code of Regulations (CCR), Section 6780 (c).

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